First Case Review

- The helicopter is dispatched to a snowmobile crash where the helmeted male lost control hitting some trees driving down a very steep incline in the mountains at 1530

Identify your Performance Improvement issues for this case as we review it

EMS

- Only EMS times documented are the arrival to & departure from the scene
- 1612: EMS arrives to find 35 year old male found lying flat in the snow with manual spinal stabilization being held
- RR 24, palpable radial pulse at a rate of 112, BP132/78, GCS 15, suspected injuries to back, unstable pelvis and open right ankle fracture with good CMS distally
- 1630: EMS left the scene after warming measures initiated, spinal stabilization with cervical collar,
- 16 gauge IV placed, Fentanyl given & ankle dressed/splinted enroute

Emergency Department

- 1700: Patient arrives with HR 120, RR 28 with sat 86% on room air, BP 118/84, GCS 15, no temperature recorded, complaining of severe back pain
- Placed on monitors, O^2 per NRB, one 18 gauge IV placed with LR infusing, MS 2 mg given, clothes removed, Bair Hugger placed
- 1713: Portable CXR: multiple posterior fractured ribs bilaterally with R hemo/pneumothorax, no portable pelvis film done, Ancef hung
- 1800: R Chest tube inserted by surgeon with 300 ml blood returned, RR down from 30 to 22, HR 100, BP 108/80
- 1822: To CT for head/neck/chest/abdomen/pelvis/ankle

Emergency Department

- 1900: Return to ED
- 1914: Orthopaedic consult, MS 2mg, R ankle & pelvis splinted
- 1955: To ICU with report of:
  - Multiple bilateral rib fractures with R hemo/pneumothorax & bilateral pulmonary contusions with chest tube inserted
  - Pelvic ring fractures include R sacrum/acetabulum with pelvic stabilization device applied
  - Open R comminuted ankle fracture dressed/splinted/Ancef given

Possible EMS PI Issues

What went well:

- Bystander maintaining spinal stabilization
- Early warming measures
- Appropriate spinal stabilization
- Open ankle fracture dressed & splinted

What could be improved:

- EMS times not all recorded (incl procedures)
- No supplemental O^2
- No sheet/splint applied to stabilize the pelvis

Possible ED PI Issues

What went well:

- Monitors placed
- Warming continued
- Supplemental O^2 placed
- Portable CXR done
- 2nd IV placed
- Chest tube placed prior to CT

What could be improved:

- No temp recorded
- Late chest tube insertion (surgeon)
- No portable pelvis x-ray
- Late pelvic stabilization
- Inadequate pain relief

Primary Review

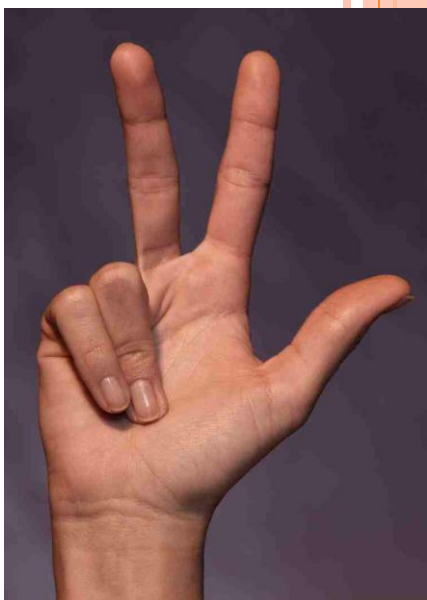
- We just did a primary review of the chart and have identified some issues for possible performance improvement follow-up
- You may identify PI issues in ways other than chart review
- Document all the issues you identify
- You may be able to perform the necessary follow-up
- Document what you do and when in your PI documentation
- If you make an action, continue to follow issue in subsequent cases to be sure it was effective
- The issue may be closed at this level
- Report your success

Secondary Review

- The issues identified will need a bigger team to accomplish resolution or the matter is clinically significant
- Review the issues with chart with your Trauma Medical Director and share your investigation of issue
- Discussion continues your action plan development
- You may jointly determine how to manage the issue and no further review of the issue is needed
- OR you may need to take the issue to the next level for committee review
- Record in PI documentation, continue to follow, share

Tertiary Review

- The Trauma Medical Director/Trauma Coordinator take the case highlighting PI issues before committee review
- Obtain input & assistance with action plan development along with buy-in
  - Multidisciplinary Trauma Committee
  - Medical Peer Review
  - RTAC
- May use existing meetings
- Share with hospital PI program



Multidisciplinary Trauma Committee

- Committee with representatives from all phases of trauma care (document attendance)
  - Chaired by trauma program with medical providers, EMS, nurses (ED, OR, ICU), laboratory, radiology, respiratory therapy & admin
- This group is best to work on process type issues
  - Global system & operational issues that may effect clinical care
- Document frank discussions & action plan either in:
  - Meeting minutes
  - PI documentation for that case
- Continue to follow issue to assure "loop closure"
- Be able to link PI process to individual case for trauma designation survey

Confidentiality Protection

- Confidentiality protection is important to allow for frank discussion of issues with accurate documentation
- Include statement of confidentiality on PI documentation
- Use generic identifiers for the patient, pr EMS agency, flight teams & other facilities
- If PI handouts used at meetings, collect and destroy at the end
- Keep PI documents locked in a secure area with limited access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Second Case Review

- EMS is dispatched for an unrestrained woman ejected during a single vehicle rollover after she lost control of the vehicle during a rain storm at 0720

Identify your Performance Improvement issues for this case as we review it

EMS

- Paged out for MVC with ejection that occurred at @ 0720
- Dispatched 0725, responded 0730, on scene 0730, left scene 0800, arrived at facility 0814
- MIVT radio report to hospital at 0804
  - **M**- 37 year old unrestrained female driver of a vehicle that lost control, rolled vehicle & was ejected
  - **I**- Suspected injuries include face/head, neck, back, and abdominal injuries
  - **V**- BP130/70, HR 110, RR 24, O2 sat 94%, GCS 10, PERLA
  - **T**- Oxygen via NRB at 15L/min with spinal stabilization with cervical collar & backboard, one 18 gauge IV inserted, trauma team not activated

Emergency Department

- 0814: Patient arrives to the ED, no trauma team
- 0815: Primary survey done and no life threats identified, secondary survey started
- 0818: BP128/80, HR108, RR22, O^2 sat 94%, temp 97, GCS 10, PERLA
- 0824: The 18 gauge IV replaced as infiltrated & warmed LR given at fast rate
- 0822: Portable chest and pelvis x-rays done which revealed L rib fractures
- 0834: Inter-facility transfer initiated – flight team out on a call and will take this transfer when return

Emergency Department

- 0845: BP118/72, HR110, RR24, 96%, GSC 9 and taken to CT which reveals large skull fracture, cerebral contusions with swelling, nasal & L blowout fractures, C5-6 fractures, L rib fractures
- 0910: Returned from CT
- 0930: BP116/78, HR110, RR28, 96%, GCS 9
- 1030: Flight team arrives, 2nd IV placed, patient intubated with RSI & warming measures initiated
- 1050: Patient leaves with the flight team

Issue Identification

What went well:

- EMS scene time short
- Timely EMS radio report
- Prehospital O^2 & spinal stabilization
- Portable primary survey x-rays done timely
- Prompt initiation of inter-facility transfer

Where could be improved:

- Long scene time ø extrication
- No trauma team
- Late warming measures
- One IV placed
- Declining GCS with late intubation
- Late inter-facility transfer
  - Only one flight team involved

Next Step

What do we do

- Secondary review with trauma medical director?
- Tertiary review at a committee?
  - Which committee?
- Possible action plans:
  - Research appropriate care
  - Clinical guidelines
  - Provide education (all)
  - Clinical practice

Issues

- 30 minute scene time
- No trauma team
- Late warming measures
- One IV placed
- Late intubation with decreasing GCS
- Delayed transfer

Performance Improvement Process

- Document all issues identified from chart review & other means
- Can you deal with the issue or do you need help?
- Does your Trauma Medical Director need to be in the loop?
- Jointly decide if this warrants committee review
- Some issues don't require any action now, continue to trend in upcoming cases to determine if action is necessary

Performance Improvement Process

- Present case presentation/PI issues at committee
- Agree on and implement action plans
- Continue to follow issue to assure action plan worked or you have "closed the loop"
- If it is working then consider tightening up your expectations to get even better
- Share your PI program results
- Document all PI steps

Trauma Performance Improvement

The goal of the entire trauma performance improvement process is to achieve the best possible trauma care throughout the continuum you are able to affect